

## WHAT IS CLAIMED IS:

1. A semiconductor package to be mounted with semiconductor chips, said semiconductor package comprising a heat-radiating substrate having a thickness of smaller than 0.4 mm of a Cu-Mo composite and formed by impregnating from 30 to 40 % by mass of copper (Cu) melt into a green compact of molybdenum.
2. A semiconductor package as claimed in claim 1, wherein said heat-radiating substrate is a high-reliability heat-radiating substrate and has a thermal expansion coefficient of from  $7.7$  to  $9.0 \times 10^{-6}/K$ , a thermal conductivity of from 200 to 220 W/m·K, a Young's modulus of from 220 to 230 GPa, and a density of not larger than  $9.8 \text{ g/cm}^3$ .
3. The semiconductor package as claimed in claim 1 or 2, wherein semiconductor chips are microwave semiconductor chips.
4. A power semiconductor package with semiconductor chips being mounted on a composite substrate of aluminum nitride as sandwiched between heat-radiating substrates of high heat conductivity metal plates, at least one of said heat-radiating substrates being of substantially a Cu-Mo composite as prepared by impregnating copper melt into a green compact of Mo powder having been previously mixed with at most 5 % by mass of Cu, in such a manner that the total Cu content of the thus-impregnated green compact may fall between 40 and 60 % by mass.

5. An isostatic pressing method of producing green compacts, which comprises the steps of disposing at least two plates adjacent to the inner surface of a side wall as divided into at least two portions, putting a powder into the space between the plates with covering the powder compact with a flexible cover to prepare a composite, then putting the resulting composite into a pressure tank, applying an external isostatic pressure thereto against said flexible cover, and then sliding said plates via the cover along the side wall thereby compressing the composite between the thus-slid plates into a green compact.

6. The isostatic pressing method as claimed in claim 5, wherein at least two plates are so disposed that a pair of the plates face each other along the inner surface of the side wall as divided into at least two portions, and a powder is filled into the space between the plates to give a powder compact therebetween, at least one partitioning plate being disposed between the pair of opposed plates, said powder being filled into every space as formed by the opposed plates and the partitioning plate to give a plurality of green compacts all at a time.

7. An isostatic pressing method of producing green compacts, which comprises disposing at least two plates adjacent to the inner surface of a side wall as divided into at least two portions, putting a powder into the space between the plates with covering the powder compact with a flexible cover to prepare a composite, then putting the resulting composite into a pressure chamber in a dry

isotactic molding device, applying an external isostatic pressure thereto against said flexible cover, and then sliding said plates via the cover along the side wall thereby compressing the composite between the thus-slid plates into a green compact.

8. An isostatic pressing method as claimed in claim 7, wherein at least two plates are so disposed that a pair of the plates face each other along the inner surface of the side wall as divided into at least two portions, a powder being filled into the space between the plates to give a powder compact therebetween, at least one partitioning plate being disposed between the pair of opposed plates, and said powder is filled into every space as formed by the opposed plates and the partitioning plate to give a plurality of green compacts all at a time.

9. A method of producing heat-radiating substrates, which comprises the steps of disposing at least two plates adjacent to the inner surface of a side wall as divided into at least two portions, putting Mo powder into the space between the plates with covering the powder compact with a flexible cover to prepare a composite, then putting the resulting composite into a pressure tank or into a dry isostatic molding device, applying an external isostatic pressure thereto against said flexible cover, then sliding said plates via the cover along the side wall thereby compressing the composite between the thus-slid plates into an Mo green compact, mounting Cu on the Mo green compact, and then heating the Mo green compact with Cu mounted

thereon so as to impregnate Cu into the Mo green compact to give a heat-radiating, Cu-Mo composite substrate.

10. A method of producing heat-radiating substrates as claimed in claim 9, wherein said Cu-Mo composite substrate is rolled into a heat-radiating substrate having a thickness of smaller than 0.4 mm.

11. A method of producing heat-radiating substrates as claimed in claim 9, wherein at least two plates are so disposed that a pair of the plates face each other along the inner surface of the side wall as divided into at least two portions, Mo powder being filled into the space between the plates to give an Mo powder compact therebetween, at least one partitioning plate being disposed between the pair of opposed plates, said Mo powder being filled into every space as formed by the opposed plates and the partitioning plate to give a plurality of Mo green compacts all at a time.